

MODIS sensor Working Group (MsWG) Summary

Attendance: Bob Barnes, Stuart Biggar, Vincent Chiang, Wayne Esaias, Bruce Guenther, Gerhard Meister, Chris Moeller, Junqiang Sun, Gary Toller, Jack Xiong, Eric Vermote, Robert Wolfe, Zhengming Wan, Joe Esposito

Scheduled Items

Item 1 Instrument Status

- JX) Terra: The current superset (SS) issues are resolved. Terra is assigned 34 SSs. Last time Stuart asked if the currently failing SSs were the same as those that failed before the last recycling. This is not the case. SS failures do not appear to recur.
- EV) Will the recorder be reformatted?
- JX) This is not under discussion at the present time.
- RW) How many SSs can be lost before science is affected?
- JX) If the number drops by another two SSs (32 supersets) and no other source (MISR) is available then the SSR must be recycled to recover lost SSs.

No comments on Aqua status (known to have experienced no problems since last meeting)

Item 2 L1B/LUTs related

- JX) Aqua: The new m_1 LUT, including smoothing using fitted functions, has been sent to Miami, SDST, and SeaWiFs for testing.
- EV) There were steps (step functions) in the Aqua m_1 trend that were not understood. How were these steps handled?
- JX) The opened SD door and screen opened for a week contributed enhanced degradation of the SD. In addition, an erroneous LUT value was used by SDST (in L1A PGE03) prior to day 225 (2002225) that contributed to sun angle offsets causing m_1 errors. This has now been caught and fixed in the Aqua m_1 analysis. The trend is now smooth without apparent steps although oscillations still exist just as in Terra.
- RW) The instrument to SD coordinate system rotation angle that was used had the value for Terra (initial fill value 20.143°) instead of Aqua. The initial value was replaced with the proper Aqua value (20.294°).
- JX) Band 25 is used for the Aqua RSB SWIR correction. One B26 detector is smaller from recent calibrations.

JX) The Aqua time dependent RSB RVS LUT was built from the SD and lunar calibrations using a two point linear function. The maximum change from the pre-launch values was 1%.

The time dependent Aqua RSB RVS LUT was built from the SD and lunar calibrations using a two point linear function. Only a 1% change or less is seen across a scan. The SRCA AOI is near the SD AOI and large fluctuations cause large errors when using second order fitting.

EV) The Terra and Aqua scan mirrors degraded differently. Is there a reason?

JX) Bruce has pointed out that the Terra mirror was “smoked” during TV testing which may cause the degradation difference.

CM) Is the time dependent LUT only for the RSB for this Aqua update?

JX) Yes, TEB uses a constant RVS.

Around the Table

Participant: Gary Toller – L1B V4.3.1 (Aqua) and new LUTs V4.3.1.0 were delivered to SDST for I&T. V4.3.0 (Terra) and new LUTs. V4.3.0.0 were also delivered to SDST. A MCST test version adds 33 new fields to the L1B product without substantial impact to file size or data volume.

Participant: Bob Barnes – SeaWiFs would like a copy of the solar irradiance currently used by MCST.
(*Action: Joe to provide solar irradiance spectra to Bob Barnes and Stuart Biggar [MCST FTP site]*)

Participant: Eric Vermote – We sent data sets that included maneuver data. Is the science testing of these data sets ongoing?

RW) Science test has not started yet. The maneuver data sets will be done separately.

VC) Vincent asks CM is he has had a chance to begin looking into the new Terra SWIR OOB coefficients sent to him.

CM) The coefficients seem to present no problems, but CM will look and check further.

Participant: Discussion on Stray Light Issue

JX) If the scan mirror over fills the primary mirror and the focal plane (detectors) can see outside of the PM then stray light affecting the Earth scene (ES) will be scene dependent.

BG) The principal baffle for the primary mirror is the scan mirror, the halo around the scan mirror from Earthshine radiance will contribute to EV data. There is opportunity, if money exists, for SBRS to use stray light tools to investigate this effect.

JX) MCST looked at day/night comparison of the SV to see if there are any stray light problems. No problems are apparent in the SV.

BG) SBRS has a scale model of MODIS that gives insight on stray light paths. There is always a region behind the scan mirror where the stray light (halo) goes. For the on-board calibrators, the scan mirror blocks this light. If there is stray light on the solar diffuser behind, then this light can reach the detectors.

The analysis for this is beyond the scope of Gene Waluschka’s work.

WE) Who should be pursuing this opportunity?

JX) I'll bring this up with Vince and SBRS (further offline talk between VS, WE, JX suggested).

Next meeting November 26, 2003